

I-Chao Shen

ichao.shen@ui.is.s.u-tokyo.ac.jp

<https://jdily.github.io>

Research Interests

Computer graphics, vector graphics, data-driven 2D/3D geometry analysis and processing, machine learning.

Education

National Taiwan University

Ph.D. in Computer Science

Advisor: Bing-Yu Chen.

Thesis: 2D Visual Content Design Driven by Human-Guided Optimization

Taipei, Taiwan

Sep 2017 - Dec. 2020

National Taiwan University

Master in Information Management and MBA

Advisor: Bing-Yu Chen.

Thesis: Perspective-aware Warping for Seamless Stereoscopic Image Cloning

Taipei, Taiwan

Sep 2009 - June 2011

National Taiwan University

Bachelor in Information Management

Taipei, Taiwan

Sep 2005 - June 2009

Experiences

Project Assistant Professor, Tokyo, Japan

Dept. of Creative Informatics, The University of Tokyo

Sep. 2022 -

Postdoctoral researcher - JSPS Foreign Researchers Fellowship, Tokyo, Japan

Host : Takeo Igarashi

Dec. 2020 - Aug. 2022

Research Visitor - JST CREST Project, Tokyo, Japan

Supervisor : Takeo Igarashi

Feb 2018 - July 2018, Aug 2019

Research Assistant - CMLab, National Taiwan University, Taipei, Taiwan

Supervisor : Bing-Yu Chen

Apr 2017 - July 2017

Research Assistant - Imager Lab, The University of British Columbia,

Vancouver, Canada

Supervisor : Alla Sheffer

Sep 2014 - Mar 2017

Research Intern - Imagination Lab, Adobe Research, San Jose, CA

Supervisor : Nathan Carr, Duygu Ceylan, Zhaowen Wang

May 2015 - Aug 2015

Research Assistant - CITI, Academia Sinica, Taipei, Taiwan

Supervisor : Wen-Huang Cheng

Sep 2011 - July 2014

Publications

360MVSNet: Deep Multi-view Stereo Network with 360° Images for Indoor Scene Reconstruction

Ching-Ya Chiu, Yu-Ting Wu, I-Chao Shen, Yung-Yu Chuang

to appear in IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) 2023 (Algorithm Track)

StyleFaceUV: a 3D Face UV Map Generator for View-Consistent Face Image Synthesis

Wei-Chieh Chung, Jian-Kai Zhu, I-Chao Shen, Yu-Ting Wu, Yung-Yu Chuang

to appear in The British Machine Vision Conference (BMVC) 2022

ODEN: Live Programming for Neural Network Architecture Editing

Chunqi Zhao, [I-Chao Shen](#), Tsukasa Fukusato, Jun Kato, Takeo Igarashi
in proceeding of ACM Intelligent User Interfaces (IUI) 2022

Per Garment Capture and Synthesis for Real-time Virtual Try-on

Toby Chong, [I-Chao Shen](#), Nobuyuki Umetani, Takeo Igarashi
in proceeding of User Interface Software and Technology (UIST) 2021

Data-driven Sketch Beautification with Neural Feature Representation

[I-Chao Shen](#)
IEEE Computer Graphics and Applications (CG&A) 2021

ClipGen: A Deep Generative Model for Clipart Vectorization and Synthesis

[I-Chao Shen](#), Bing-Yu Chen
IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021

Multi-Resolution Shared Representative Filtering for Real-Time Depth Completion

Yu-Ting Wu, Tzu-Mao Li, [I-Chao Shen](#), Hong-Shiang Lin, Yung-Yu Chuang
High-Performance Graphics (HPG) 2021

ClipFlip : Multi-view Clipart Design

[I-Chao Shen](#), Kuan-Hung Liu, Li-Wen Su, Yu-Ting Wu, and Bing-Yu Chen
Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:2008.12933 [cs.GR]

Interactive Optimization of Generative Image Modeling using Sequential Subspace Search and Content-based Guidance

Toby Chong Long Hin*, [I-Chao Shen](#)*, Issei Sato, and Takeo Igarashi (*: joint first authors)
Computer Graphics Forum, Volume 40, Issue 1, Feb 2021, arXiv:1906.09840 [cs.GR]

ZomeFab: Cost-effective Hybrid Fabrication with Zometools

[I-Chao Shen](#), Ming-Shiuan Chen, Chun-Kai Huang, and Bing-Yu Chen
Computer Graphics Forum, Volume 39, Issue 1, Feb 2020

Director-360: Introducing Camera Handling to 360 Cameras

Hao-Juan Huang, [I-Chao Shen](#), and Liwei Chan
in proceeding of MobileHCI 2020

Perception-Driven Semi-Structured Boundary Vectorization

Shayan Hoshyari, Edoardo Dominici, Alla Sheffer, Nathan Carr, Duygu Ceylan, Zhaowen Wang, [I-Chao Shen](#)
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2018).

High-resolution 360 Video Foveated Stitching for Real-time VR

Wei-Tse Lee*, Hsin-I Chen*, Ming-Shiuan Chen, [I-Chao Shen](#) and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2017)

A Scalable Active Framework for Region Annotation in 3D Shape Collections

Li Yi, Vladimir G. Kim, Duygu Ceylan, [I-Chao Shen](#), Mengyan Yan, Hao Su, Cewu Lu, Qixing Huang, Alla Sheffer, and Leonidas Guibas
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2016)

Retargeting 3D Objects and Scenes with a General Framework

Chun-Kai Huang, Yi-Ling Chen, [I-Chao Shen](#), and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2016)

Data-driven Handwriting Synthesis in a Conjoined Manner

Hsin-Yi Chen, Tse-Ju Lin, [I-Chao Shen](#), and Bing-Yu Chen
Computer Graphics Forum (Proceedings of Pacific Graphics 2015)

Gestalt Rule Feature Points

[I-Chao Shen](#) and Wen-Huang Cheng
IEEE Transactions on Multimedia (TMM), 17(4), pp. 526-537, 2015

Geometrically Consistent Stereoscopic Image Editing using Patch-based Synthesis

Sheng-Jie Luo, Ying-Tse Sun, I-Chao Shen, Bing-Yu Chen, and Yung-Yu Chuang

IEEE Transactions on Visualization and Computer Graphics (TVCG), 21(1), pp. 56-67, 2015

Stroke-guided Image Synthesis for Skeletal Structure Editing

Sheng-Jie Luo, Chin-Yu Lin, I-Chao Shen, and Bing-Yu Chen

Computer Graphics Forum (Proceedings of Pacific Graphics 2013)

Perspective-Aware Warping for Seamless Stereoscopic Image Cloning

Sheng-Jie Luo, I-Chao Shen, Bing-Yu Chen, Wen-Huang Cheng, and Yung-Yu Chuang

ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2012).

Technical Reports and Preprints

NeRF-In: Free-Form NeRF Inpainting with RGB-D Priors

Hao-Kang Liu*, I-Chao Shen*, Bing-Yu Chen (*: joint first authors)

arxiv preprint ([arxiv:2206.04901](https://arxiv.org/abs/2206.04901))

AutoPoly: Predicting a Polygonal Mesh Construction Sequence from a Silhouette Image

I-Chao Shen, Yu Ju Chen, Oliver van Kaick, Takeo Igarashi

arxiv preprint ([arxiv:2203.15233](https://arxiv.org/abs/2203.15233))

StylePart: Image-based Shape Part Manipulation

I-Chao Shen, Li-Wen Su, Yu-Ting Wu, Bing-Yu Chen

arxiv preprint ([arxiv:2111.10520](https://arxiv.org/abs/2111.10520))

Workshop Papers, Short Papers, Posters

OVERPAINT: Automatic Multi-Layer Stencil Generation without Bridges

Yuta Fukushima, Anran Qi, I-Chao Shen, Takeo Igarashi

SIGGRAPH ASIA 2022 Technical Communication

Guided Image Weathering using Image-to-Image Translation

Li-Yu Chen, I-Chao Shen, and Bing-Yu Chen

SIGGRAPH ASIA 2021 Technical Communication

Real-time Image-based Virtual Try-on with Measurement Garment

Toby Chong, I-Chao Shen, Yunfei Qian, Nobuyuki Umetani, Takeo Igarashi

SIGGRAPH ASIA 2021 Emerging Technologies

Transferring Deep Reinforcement Learning with Adversarial Objective and Augmentation

I-Chao Shen, Shu-Hsuan Hsu, and Bing-Yu Chen

IJCAI-PRICAI 2020 Workshop on Knowledge-Based Reinforcement Learning (KBRL)

Large-scale fabrication with interior zometool structure

Ming-Shiuan Chen, I-Chao Shen, Chun-Kai Huang, and Bing-Yu Chen

ACM SIGGRAPH Poster Program 2018

A Deep Learning Based Method For 3D Human Pose Estimation From 2D Fisheye Images

Ching-Chun Chen, Chia-Min Wu, I-Chao Shen, and Bing-Yu Chen.

ACM IUI Poster Program 2018

Retargeting 3D objects and scenes

Chun-Kai Huang, Yi-Ling Chen, I-Chao Shen, and Bing-Yu Chen

ACM SIGGRAPH Poster Program 2015

Painting Photolization

Chien-Wen Jung, I-Chao Shen, Sheng-Jie Luo, Bing-Yu Chen, and Wen-Huang Cheng

ACM SIGGRAPH ASIA Poster Program 2013

Texturing and Deforming Meshes with Casual Images

I-Chao Shen, Yi-Hua Wang, Yu-Mei Chen, Bing-Yu Chen, and Wen-Huang Cheng
ACM SIGGRAPH ASIA Poster Program 2012

User-Assisted Disparity Maps

Hsin-Yi Chen, Yi-Shan Lin, I-Chao Shen, Sheng-Jie Luo, Wen-Huang Cheng and Bing-Yu Chen
Pacific Graphics 2012 short paper

MusicSpace: You “Play” The Music

Chun-Yu Tsai, Hung-Jung Lin, Tzu-Hao Kuo, Kai-Yin Cheng, I-Chao Shen, Bing-Yu Chen, and Rung-Huei Liang
ACM SIGGRAPH Poster Program 2010

Patent

Smoothing images using machine learning

Nathan A Carr, Zhaowen Wang, Duygu Ceylan, I-Chao Shen
United States Patent, No. 9799102, issued October 24, 2017.

Awards and Grants

IPPR Best Ph.D. dissertation award, Honorable mention	2021
AIP Challenge Researcher, Japan Science and Technology Agency (JST), Japan,	2021 - 2022
JSPS Grant-in-Aid for Scientific Research for JPSP foreign fellow, Japan,	2021 - 2023
JSPS Postdoctoral Fellowship for Foreign Researchers	2020 - 2022
MediaTek Fellowship	2017 - 2020

Invited Talks

Computer Graphics around you everyday and how to become a Computer Graphics researcher, <i>Chikushigaoka High School, Fukuoka, Japan</i>	July. 2022
Computer Graphics around you everyday and how to become a Computer Graphics researcher, <i>Tokyo Metropolitan Tama High School of Science and Technology, Tokyo, Japan</i> JSPS science dialogue program	July. 2022
Per Garment Capture and Synthesis for Real-time Virtual Try-on, <i>JST CREST 8th Research Area Meeting</i>	Sep. 2021
2D Visual Content Design Driven by Human-Guided Optimization, <i>The University of Tokyo, Tokyo, Japan</i>	Apr. 2021

Media

Per Garment Capture and Synthesis for Real-time Virtual Try-on	2021, 2022
- BS フジ - ガリレオ X 第 259 回「現実空間 × 仮想空間二つの世界を重ねる最新技術」(JP)	
- JST News	
- NIKKEI (JP)	
- ZAIKEI (JP)	
- TechCrunch Japan (JP)	
- Tii 技術情報 (JP)	
- Independent TV (UK)	

Professional Services

- **Reviewer:**

- SIGGRAPH, SIGGRAPH ASIA
- Eurographics
- CHI
- Pacific Graphics
- CAD/Graphics
- Transaction on Multimedia
- VRST
- WACV
- BMVC

References

Takeo Igarashi

Professor, Department of Computer Science and Graduate School of Information Science and Technology, The University of Tokyo, Japan

Email: takeo@acm.org

Bing-Yu Chen

Professor in Department of Computer Science and Engineering / Information Management, National Taiwan University

Email: robin@ntu.edu.tw

Yung-Yu Chuang

Professor in Department of Computer Science and Engineering, National Taiwan University

Email: cyy@csie.ntu.edu.tw